

# Work Order ID 108293

October-11-13 10:50:37 AM

**\*108293\***

Page 1

Item ID: 646.9810

Revision ID:

Item Name: Deflector

Start Date: 10/11/13

Required Date: 10/18/13

Reference:

646.9810  
B 108293

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Stop **\*NS2\***

Start Qty: 12.00 **\*12\***

Req'd Qty: 12.00 **\*12\***

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

646.9800

A

110

0.00

**\*110\***

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

Billet size: 1.250" X 7.000" X 50.000"

1-Machine per folio FB162

DWG REV: A

FOLIO REV: AA

2- deburr and break all sharp edges

0.00

B. a 13/10/15

10  $\phi$  SL

120

0.00

**\*120\***

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

10  $\phi$  SL



# Work Order ID 108293

**\*108293\***

Page 2

October-11-13 10:50:37 AM

Item ID: 646.9810

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Deflector

Start Date: 10/11/13 Start Qty: 12.00

**\*12\***

Cust Item ID:

Required Date: 10/18/13 Req'd Qty: 12.00

**\*12\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

QC8- Inspect parts - second check

0.00

**\*130\***

QC

Memo

0.00

Quality Control

13-10-16

10

131

0.00

**\*131\***

HandFinish

Memo

0.00

Hand Finishing

CLEAN AND REMOVE ALL PART MARKING

NA

CZ 13/10/18 -

140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

**\*140\***

Outsource4

Memo

0.00

Outsource process - Anodize

Issue P/O to ATG : 21743

1- Black Anodize as per Dwg 646.9800

2- PRIME AS PER DWG, SEE NOTE #2

Certification of Conformity is required

CZ 13/10/18 10



# Work Order ID 108293

\*108293\*

Page 3

October-11-13 10:50:37 AM

Item ID: 646.9810

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Stop

\*NS2\*

Item Name: Deflector

Start Date: 10/11/13 Start Qty: 12.00

\*12\*

Cust Item ID:

Required Date: 10/18/13 Req'd Qty: 12.00

\*12\*

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

150

Receive & Inspect for Damage & Mat'l Certs

0.00

\*150\*

Packaging

Memo

0.00

Packaging

10X

DAS  
26  
9-89

13-11-8

155

QC5- Inspect part completeness to step on W/O

0.00

\*155\*

QC

Memo

0.00

Quality Control

DAS  
27  
9-89

13-11-08

10

180

Identify as per dwg & Stock Location: (x) ST 545

0.00

\*180\*

Packaging

Memo

0.00

Packaging

\*\*\*IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV\*\*\*

(x) PPP 92042

10X

DAS  
28  
9-89

13-11-12



# Work Order ID 108293

**\*108293\***

Page 4

October-11-13 10:50:37 AM

Item ID: 646.9810

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Deflector

Start Date: 10/11/13 Start Qty: 12.00

**\*12\***

Cust Item ID:

Required Date: 10/18/13 Req'd Qty: 12.00

**\*12\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

**\*190\***

QC

Memo

0.00

Quality Control

13/11/13

MF

13-11-13





# Picklist Print

October-11-13 10:50:36 AM

Page 1

Work Order ID: 108293

Parent Item: 646.9810

Parent Item Name: Deflector

Start Date: 10/11/13

Required Date: 10/18/13

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A NEW ISSUE 13/04/01 JFS VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B1.250X07.000 7075-T6 BAR 1.25" X 7.000"		Purchased	No				f	41.6683		50		SL 13-10-13	

Location

Loc Qty

Loc Code

MAT  
→ 124831

41.6683  
41.6683

41.7

**APICAL**  
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 03828

SHEET 1 OF 8

DWG NO. 646.9800

REV: NC

PREPARED BY: B. PETERS

DATE: 03/19/13

EFFECT ON DWG  
☒ INC. ☐ UNINC.

DWG TITLE: DEFLECTOR

APPROVED BY:

ENGR *[Signature]*

MFG *David Barber*

QC *[Signature]*

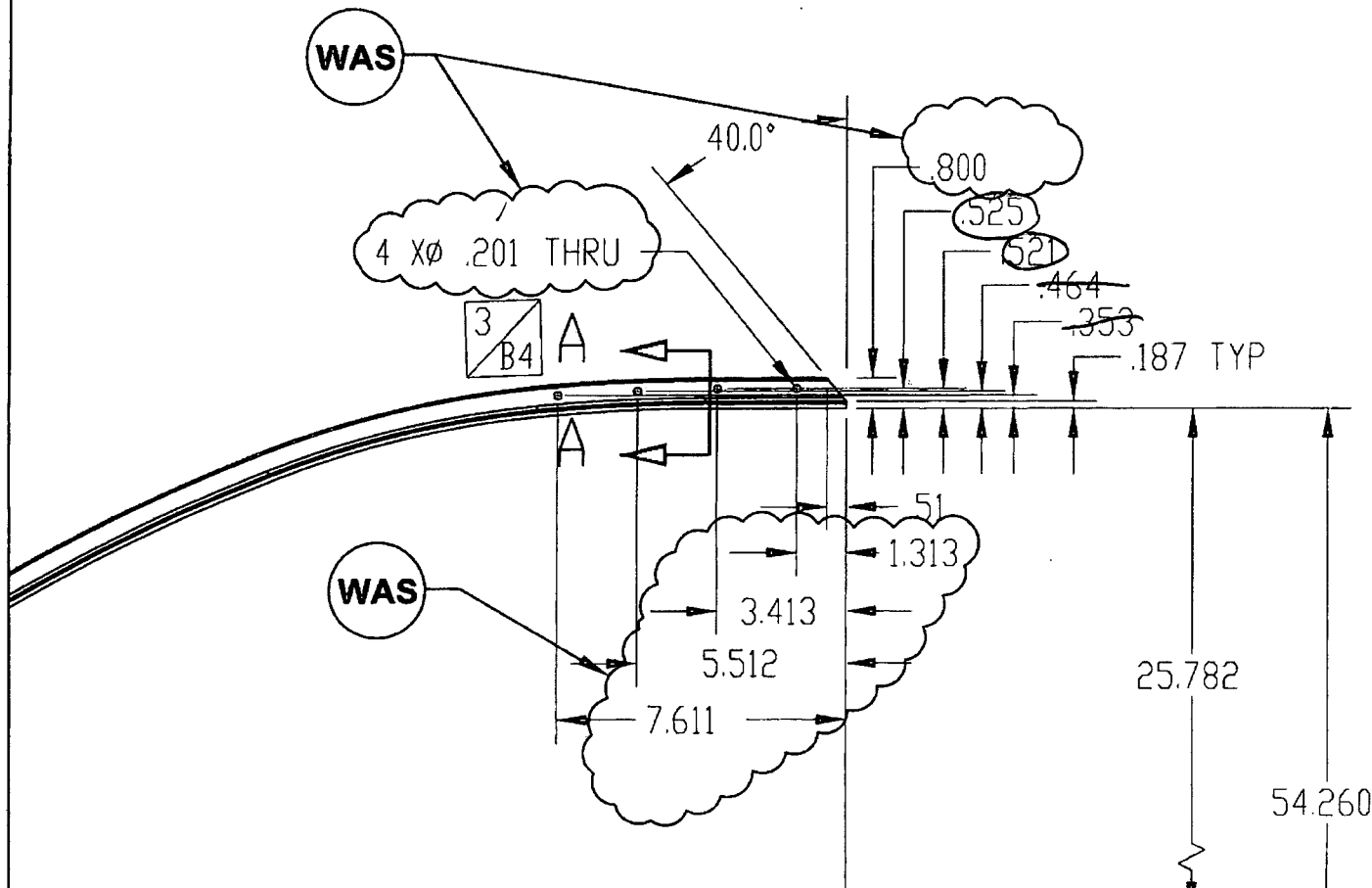
EFF: NEXT ORDER

TRANSACTION CODES (TC):  
A-ADD C-CREATE  
R-REVISE D-DELETE

REASON: REVISED CORNER RADIUS, TOLERANCES, AND ADDED INSPECTION DIMENSIONS.

ECR: D-13-029

## SHEET 1, ZONE A5-A6 & B5-B6 WAS:



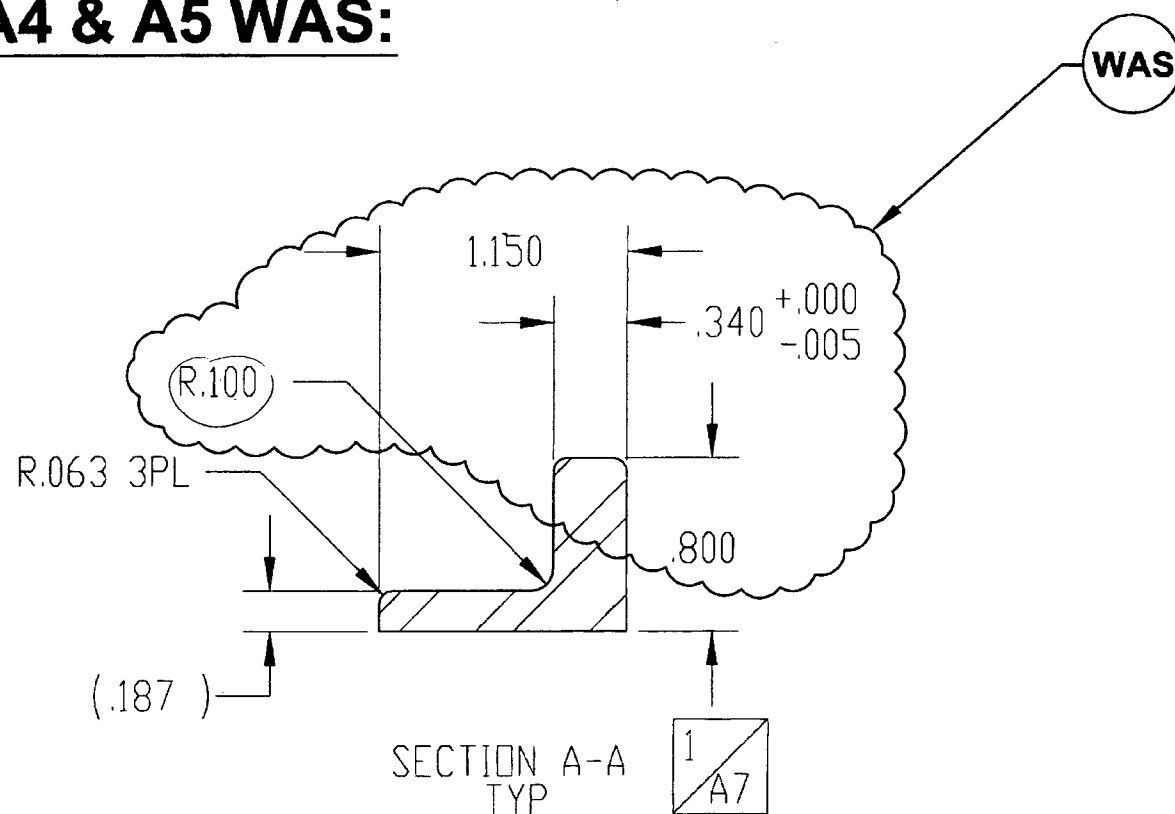
DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM

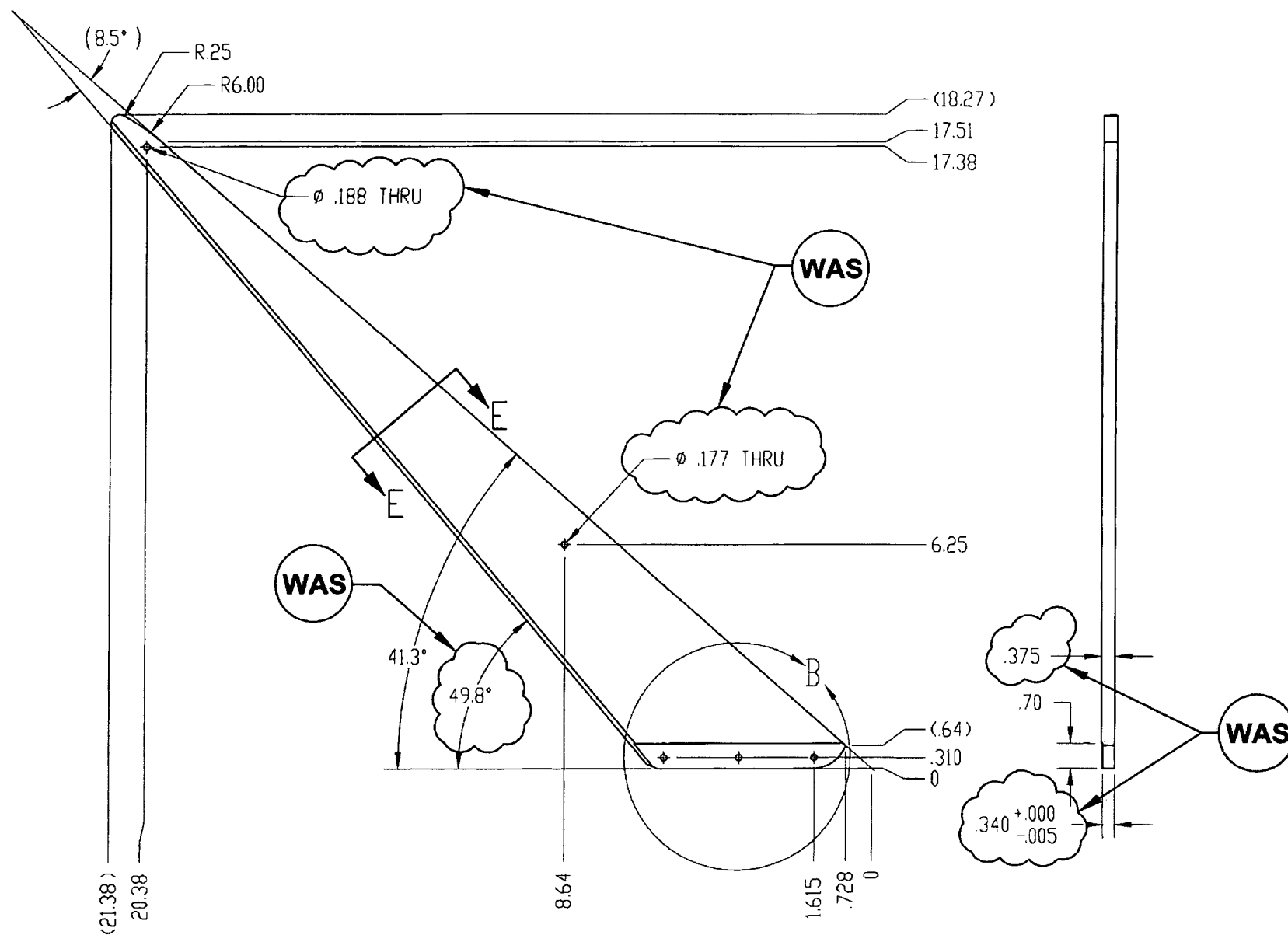
CHANGE CATEGORY  
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED  
☐ YES ☒ NO



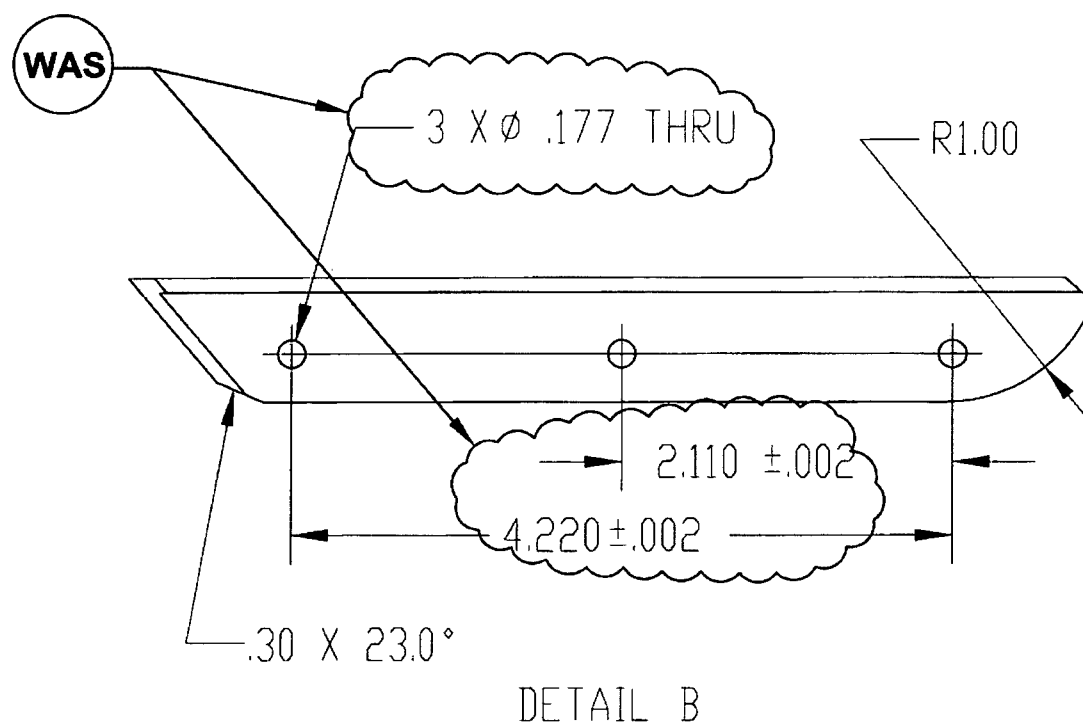
**SHEET 3, ZONE A4 & A5 WAS:**



**SHEET 4, WAS:**



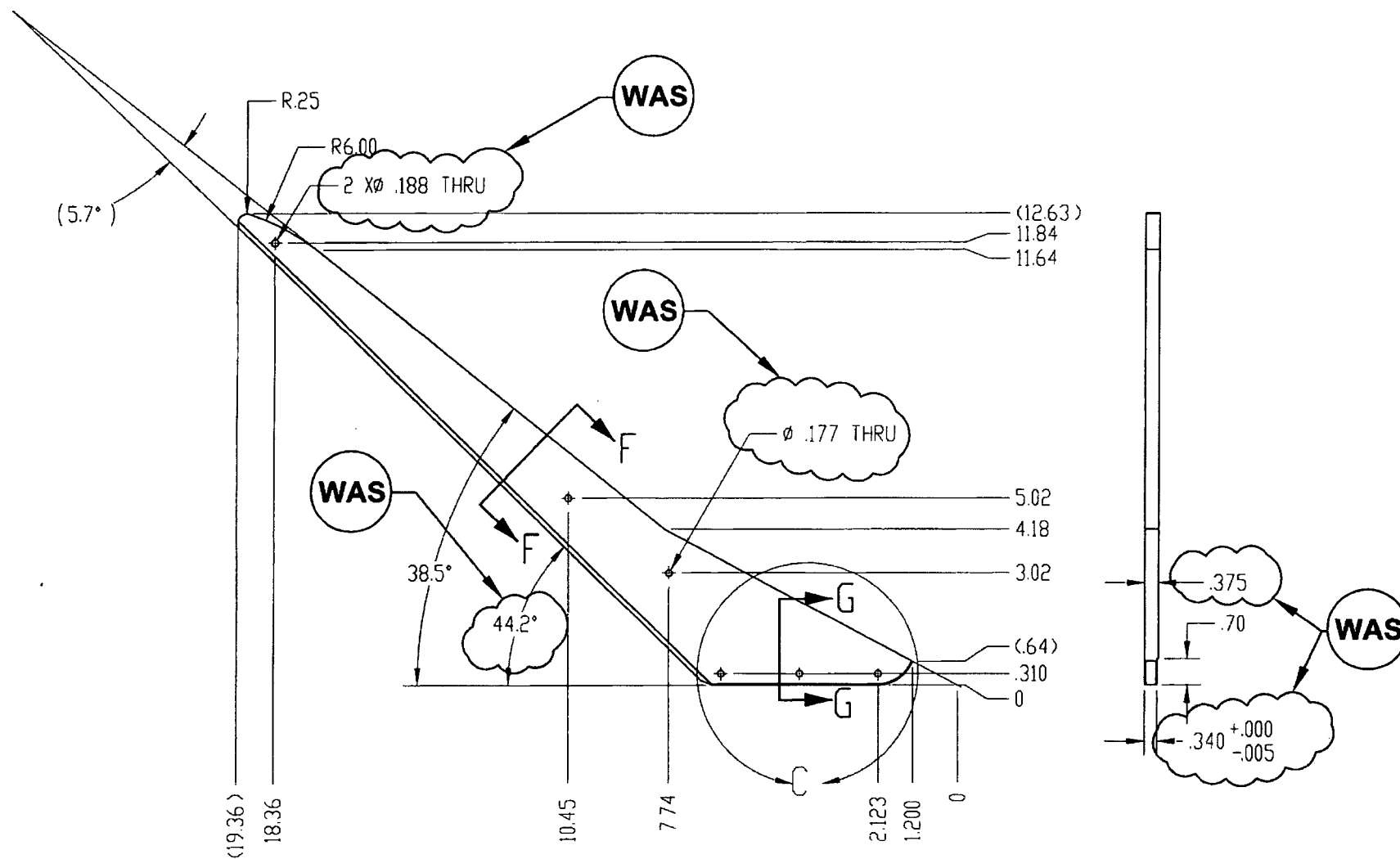
## SHEET 4, ZONE C7 & C8 WAS:





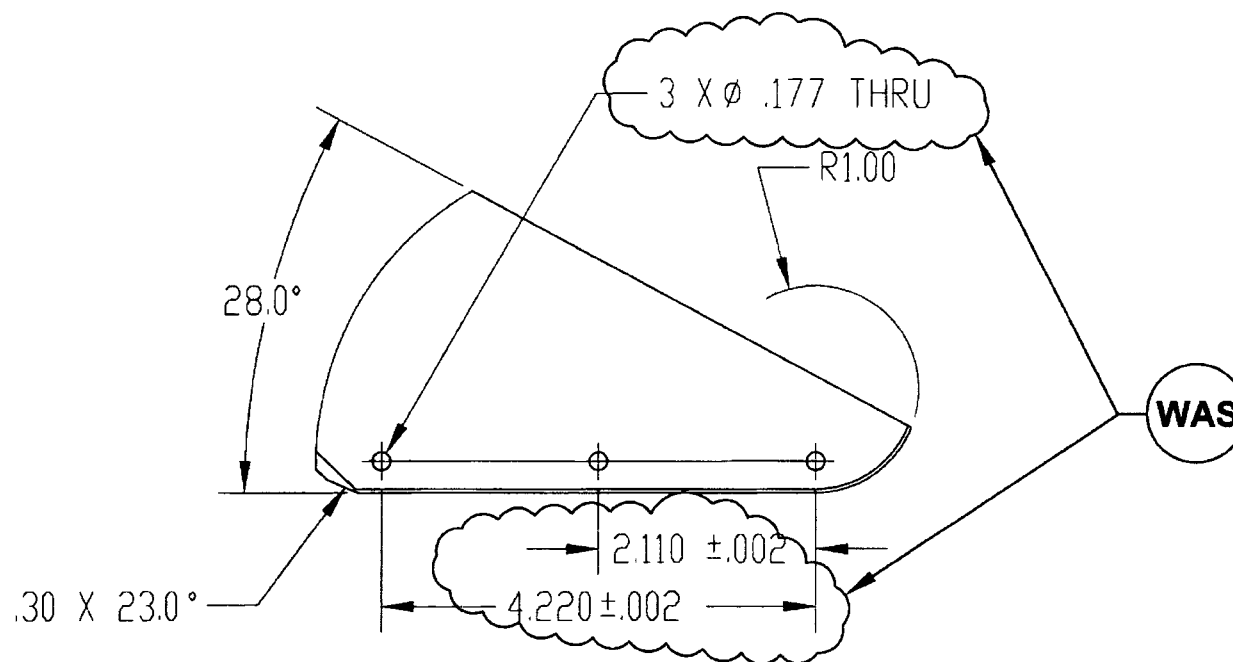


# SHEET 5, WAS:





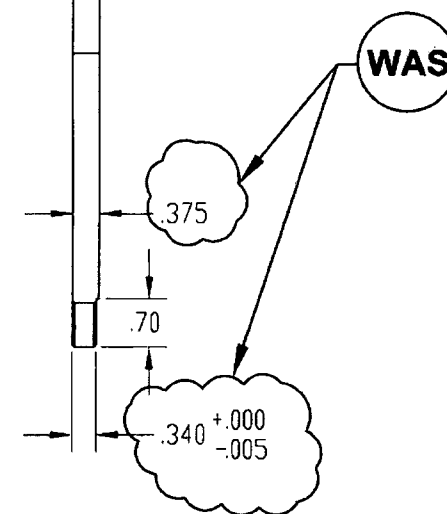
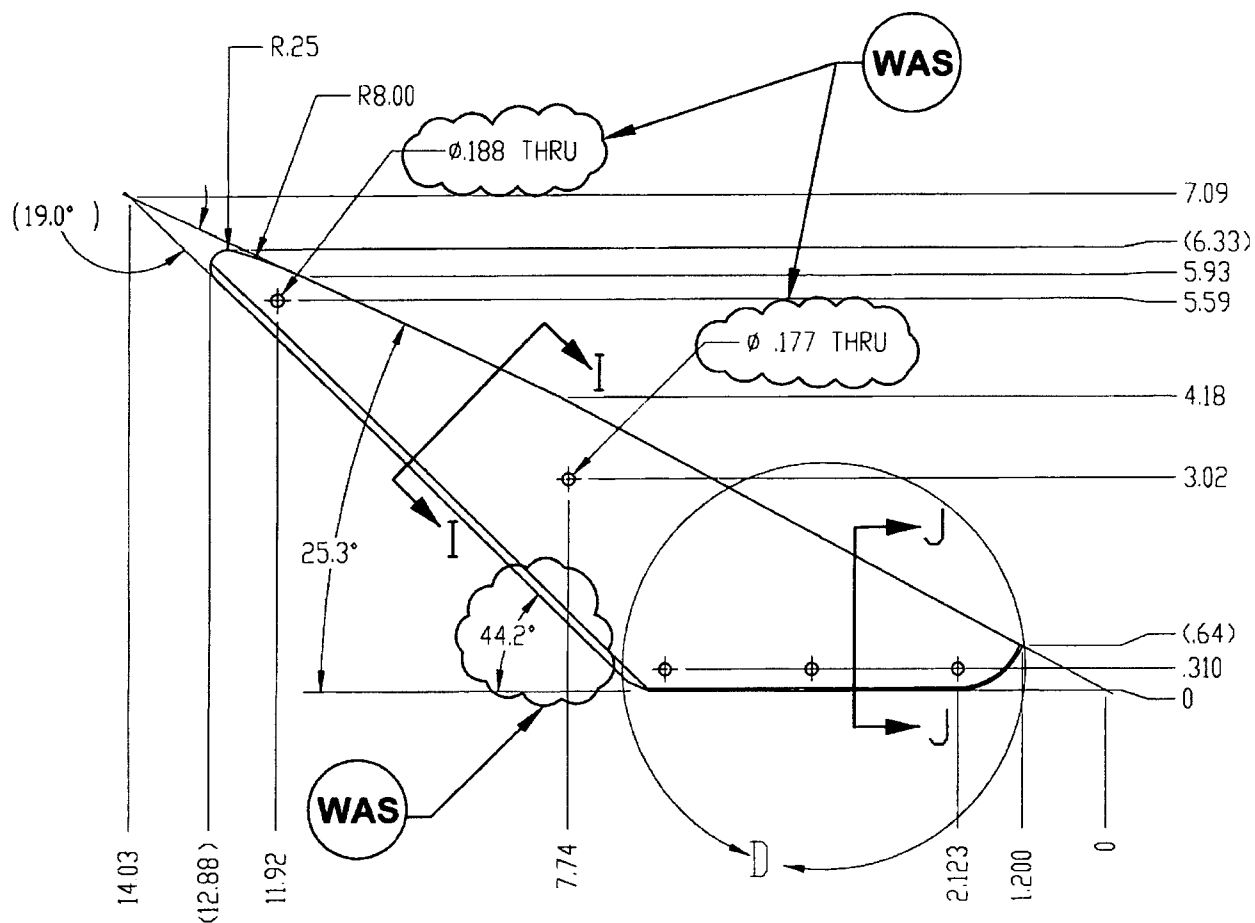
## SHEET 5, ZONE C8, D7, & D8 WAS:



DETAIL C

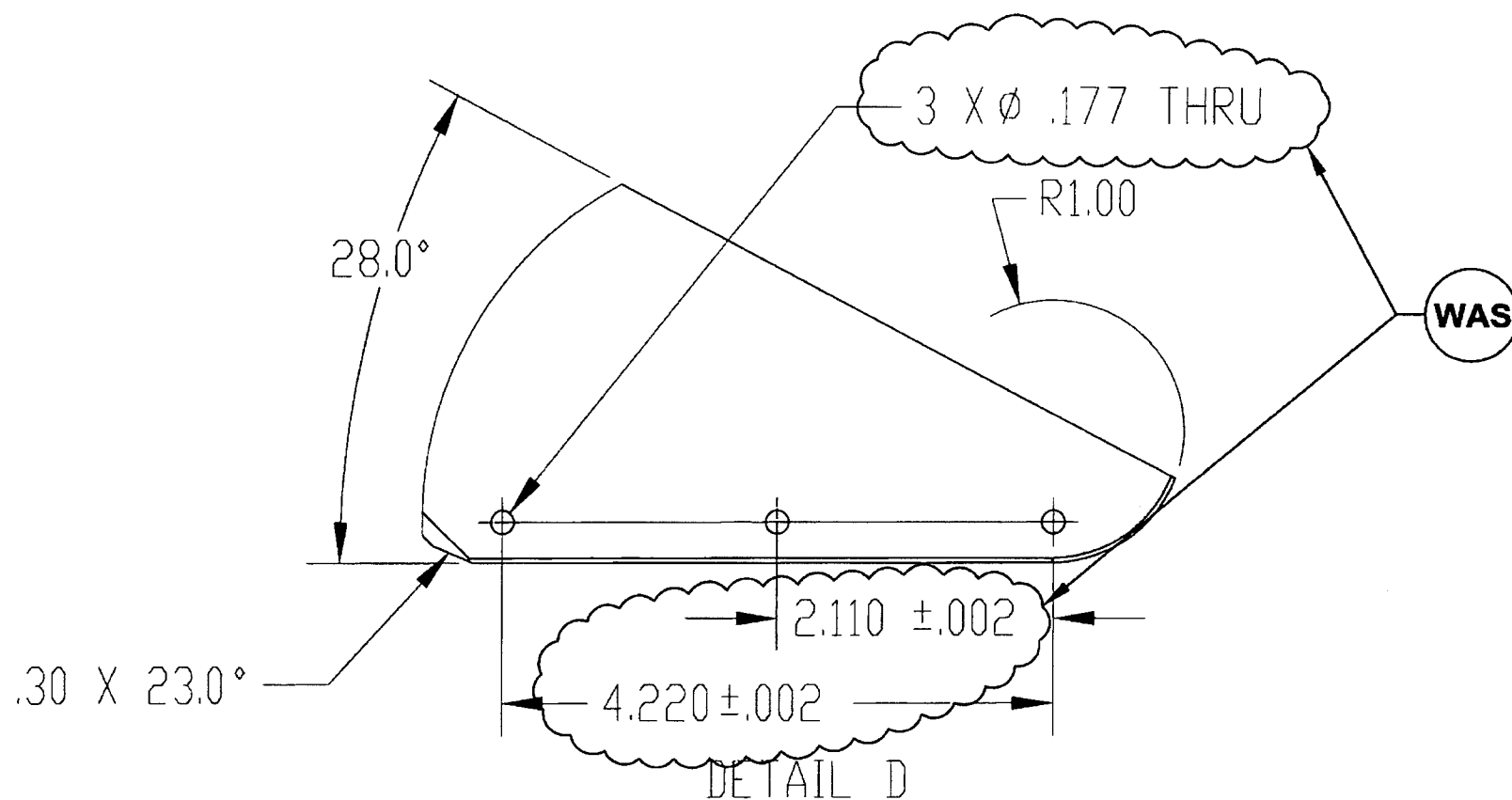


**SHEET 6, WAS:**





## SHEET 6, ZONE C6 & D6 WAS:





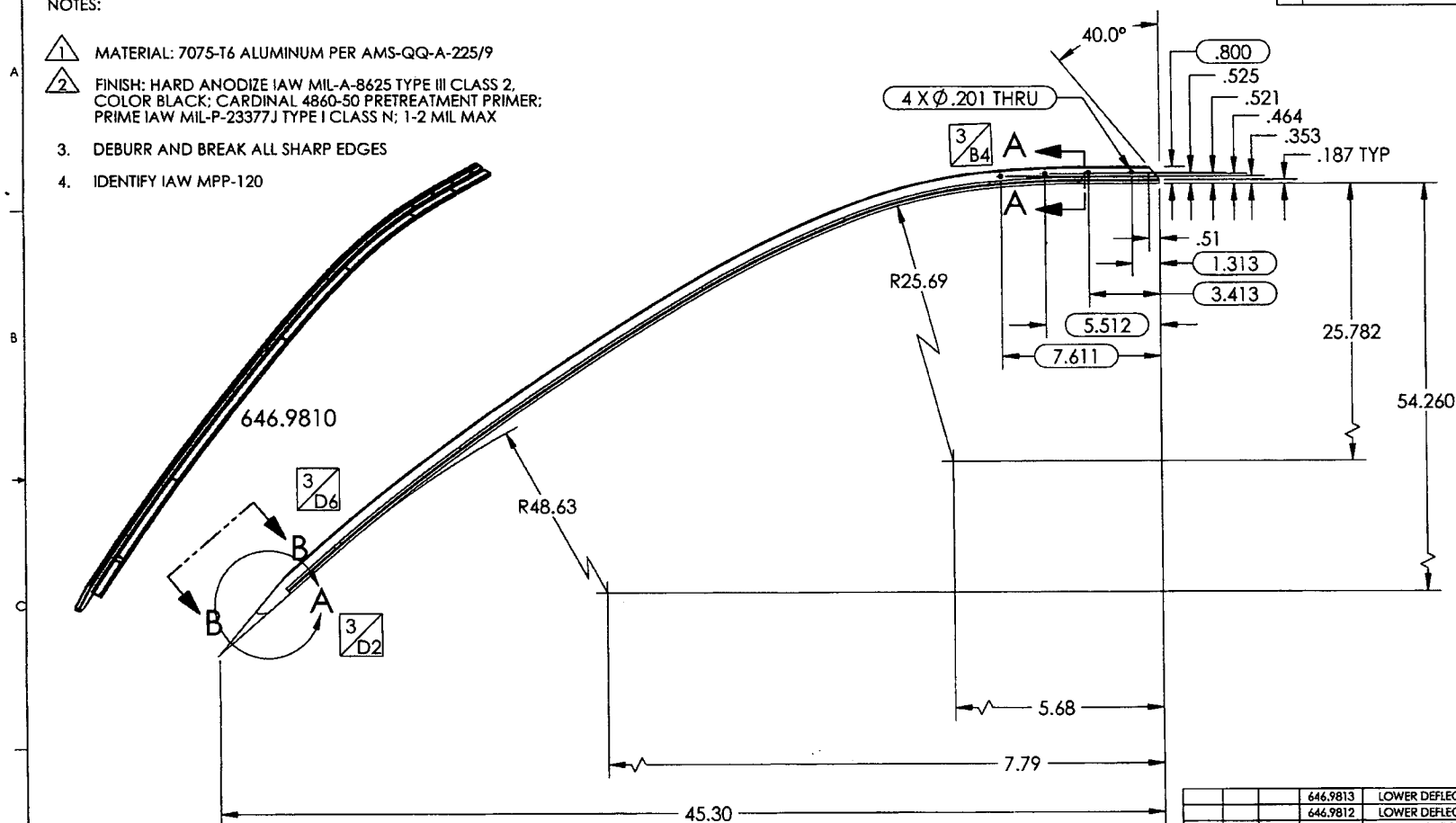


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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
N/C	INITIAL RELEASE	04/23/99	P. BRAVO
A	INCORPORATED ENGINEER	03/19/10	P. BRAVO

# NOTES:

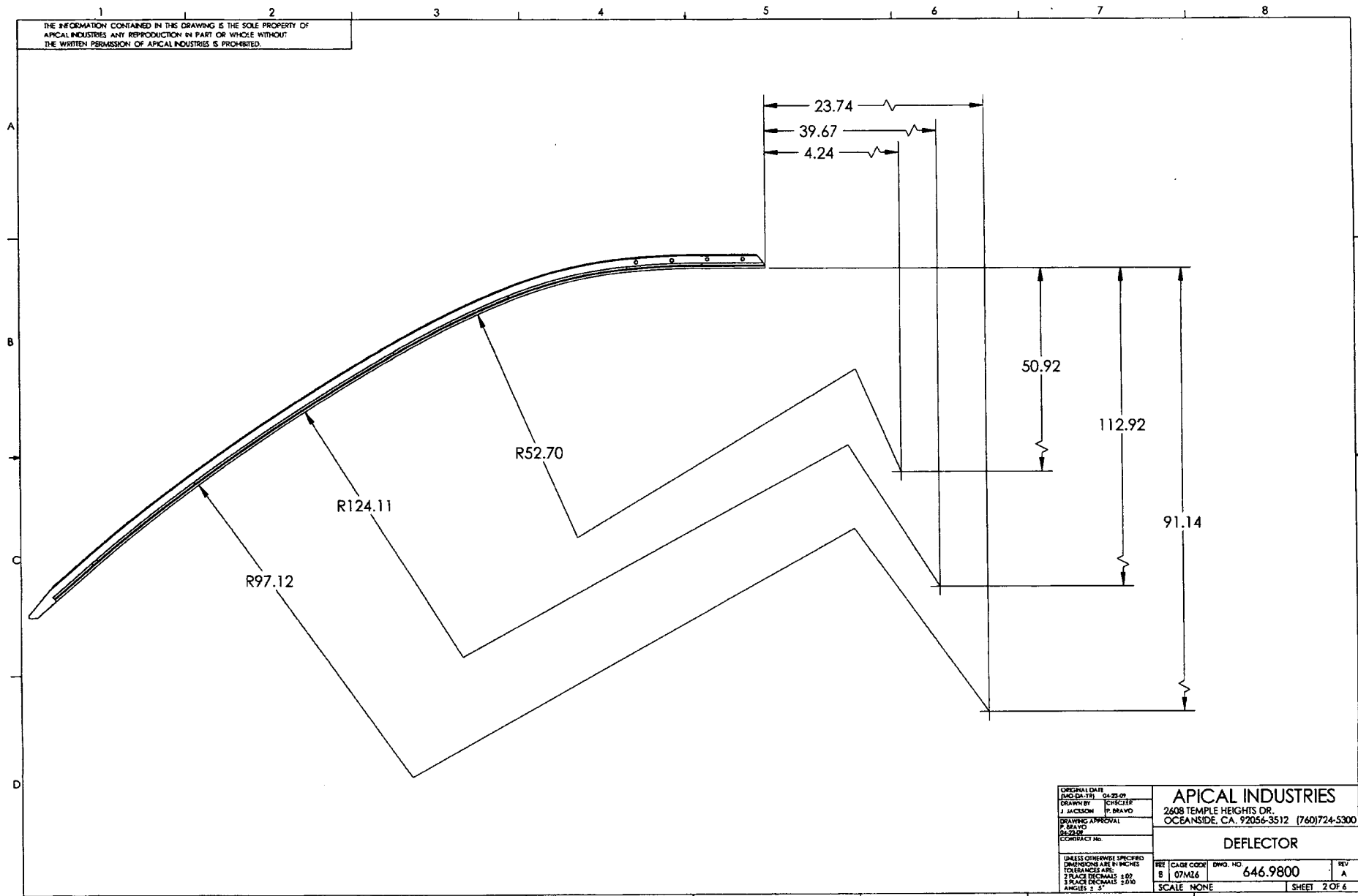
- 1 MATERIAL: 7075-T6 ALUMINUM PER AMS-QQ-A-225/9
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER; PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX
- 3 DEBURR AND BREAK ALL SHARP EDGES
- 4 IDENTIFY IAW MPP-120



	646.9813	LOWER DEFLECTOR LOW	△	△
	646.9812	LOWER DEFLECTOR HIGH	△	△
	646.9811	UPPER DEFLECTOR	△	△
	646.9810	DEFLECTOR	△	△
	FIND #	PART NO.	DESCRIPTION	MAT'L SPEC
PARTS LIST				
QTY	ORIGINAL DATE	GROUP	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300  DEFLECTOR	
NEXT ASSY (S)	DATE	BY		
646.9500	J. JACKSON	P. BRAVO		
	APPROVAL	P. BRAVO		
	DATE	04-23-99	SEE CASE CODE B 07M26 SCALE NONE SHEET 1 OF 6	
	CONTRACT NO.			
	UNLESS OTHERWISE SPECIFIED			
	DIMENSIONS ARE IN INCHES			
	TOLERANCES ARE:			
	1 PLACE DECIMALS ±.01			
	2 PLACE DECIMALS ±.005			
	ANGLES ±.5°			



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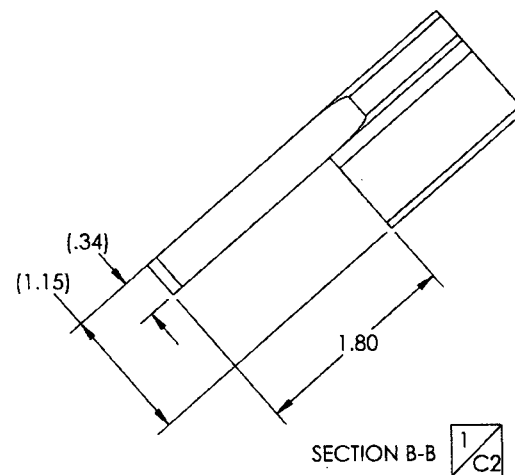
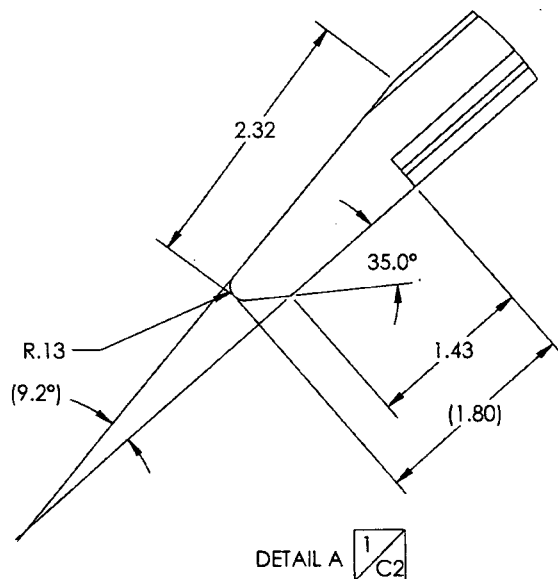
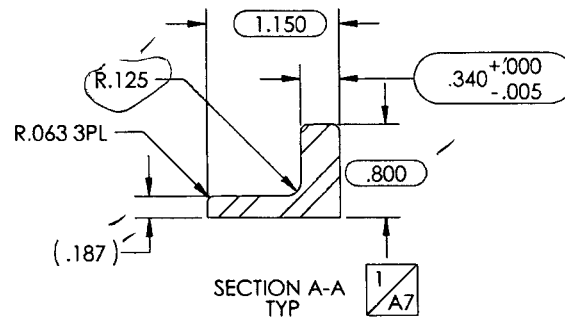
ORIGINAL DATE (MM-DD-YY)	06-28-07	<b>APICAL INDUSTRIES</b> 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY	J. JACKSON		
DRAWING APPROVAL	P. BRAVO		
CONTRACT NO.	06-22-06	<b>DEFLECTOR</b>	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.02 3 PLACE DECIMALS ±.010 ANGLES ± 5°			
REV	CAGE CODE	DWG. NO.	REV
B	07M26	646.9800	A
SCALE NONE		SHEET 2 OF 6	

**APICAL INDUSTRIES**  
2608 TEMPLE HEIGHTS DR.  
OCEANSIDE, CA. 92056-3512 (760)724-5300

**DEFLECTOR**



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ORIGINAL DATE (MM-DD-YY) 04-28-07		APICAL INDUSTRIES	
DESIGNER J. JACOBSON		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAYO		DEFLECTOR	
CONTRACT NO.		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS .005 3 PLACE DECIMALS .000 ANGLES ± .5°		SHEET 3 OF 6	REV. A



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1 2 3 4 5 6 7 8

A  
B  
C  
D

(8.5°)  
R.25  
R6.00  
21.10  
(18.27)  
17.51  
17.38  
Ø.188 THRU  
E  
E  
Ø.177 THRU  
6.25  
41.3°  
49.8°  
B  
(.64)  
.310  
0  
.340<sup>+0.000</sup><sub>-.005</sub>  
8.64  
1.615  
.728  
0  
24.06  
(21.38)  
20.38

646.9811

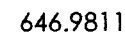
.13 X 45.0°  
2 PL  
SECTION E-E

3 X Ø.177 THRU  
R1.00  
2.110±.002  
4.220±.002  
.30 X 23.0°  
DETAIL B

ORIGINAL DATE: 04-25-09  
DRAWN BY: J. JACKSON  
CHECKED BY: P. BRAVO  
DRAWING APPROVAL: P. BRAVO  
SCALE: NONE  
CONTRACT NO.:  
UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
2 PLACE DECIMALS ±.01  
3 PLACE DECIMALS ±.005  
ANGLES ±.5°  
SET: B  
CAGE CODE: 07M26  
DWG. NO: 646.9800  
SHEET: 4 OF 6

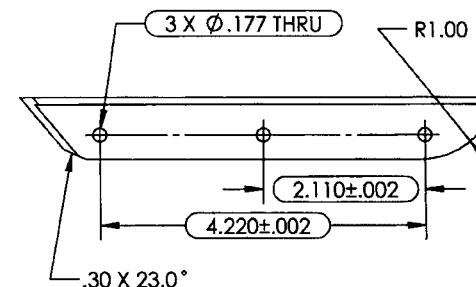
APICAL INDUSTRIES  
2408 TEMPLE HEIGHTS DR.  
OCEANSIDE, CA, 92056-3512 (760)724-5312

DEFLECTOR



.13 X 45.0°  
2 PL

SECTION E-E



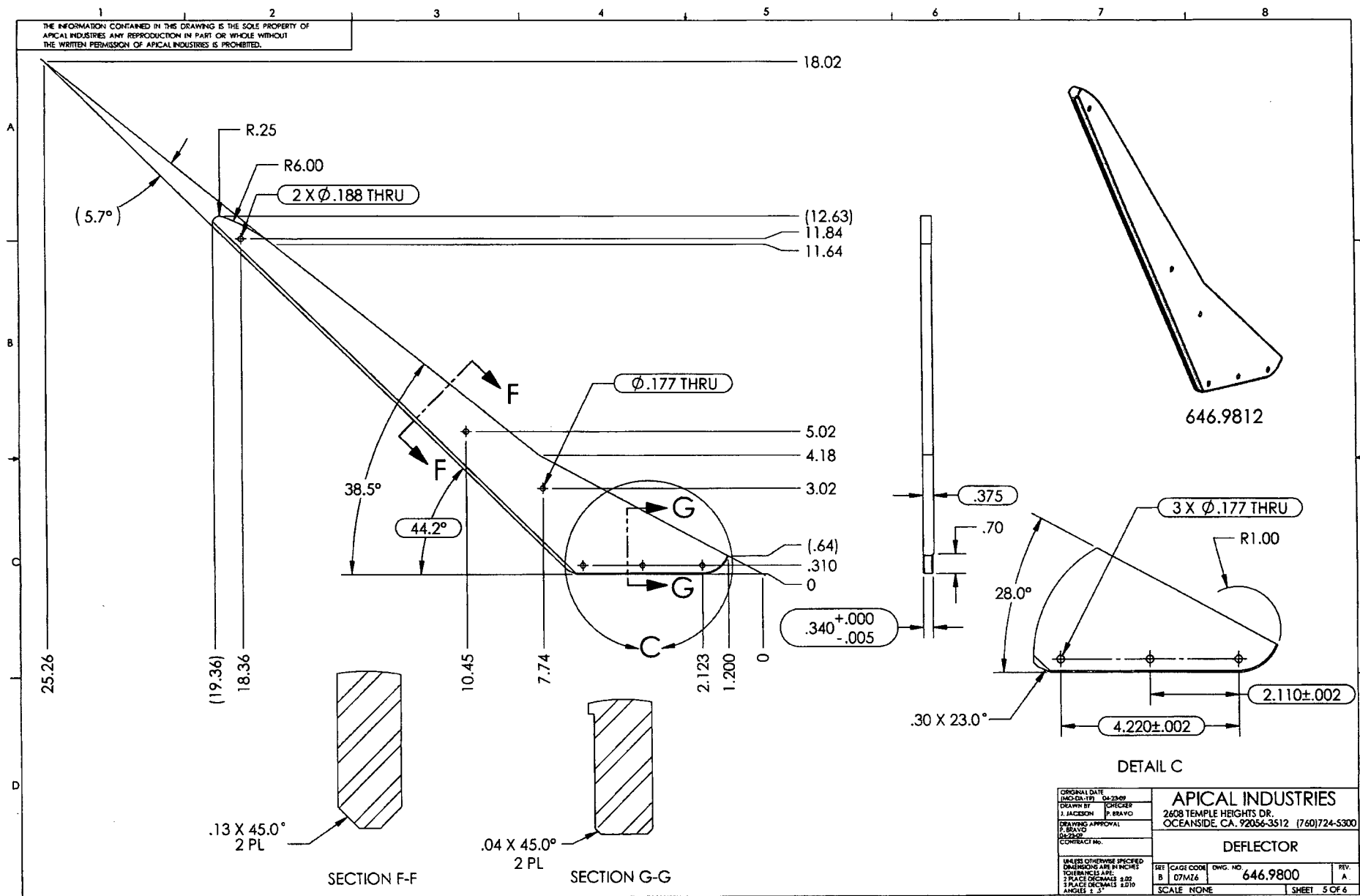
DETAIL B

ORIGINAL DATE 84-04-19	01-25-09	<h1>APICAL INDUSTRIES</h1> <p>2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300</p>			
QUANTITY 1	00000000				
DRAWING APPROVAL J. JACKSON P. BEAVER		<h2>DEFLECTOR</h2>			
CONTRACT NO.					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 FRACTIONAL .005 2 DECIMALS .010 3 PLACE DECIMALS .001		SET B	CAD CODE 07A26	DWG. NO. 646.9800	REV. A
		SCALE		SHEET 4 OF 6	





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1 2 3 4 5 6 7 8

R.25  
R8.00  
 $\phi .188$  THRU  
 $\phi .177$  THRU  
7.09  
(6.33)  
5.93  
5.59  
4.18  
3.02  
(.64)  
.310  
0  
2.123  
1.200  
0  
14.03  
(12.88)  
11.92  
7.74  
25.3°  
44.2°  
D  
J  
J  
I  
I  
SECTION I-I  
SECTION J-J  
.13 X 45.0°  
2 PL  
.04 X 45.0°  
2 PL  
646.9813  
3 X  $\phi .177$  THRU  
R1.00  
28.0°  
2.110±.002  
4.220±.002  
30 X 23.0°  
DETAIL D  
375  
.70  
.340<sup>+.000</sup><sub>-.005</sub>  
ORIGINAL DATE: 04-24-1978  
DRAWN BY: J. JACKSON  
CHECKED BY: P. BRAVO  
DRAWING APPROVAL: P. BRAVO  
DATE: 05-23-79  
CONTRACT NO.:  
UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
2 PLACE DECIMALS ±.02  
3 PLACE DECIMALS ±.005  
ANGLES ±.5°  
APICAL INDUSTRIES  
2608 TEMPLE HEIGHTS DR.  
OCEANSIDE, CA. 92056-3512 (760)724-5300  
DEFLECTOR  
SHEET 6 OF 6

## FIRST ARTICLE INSPECTION CHECKLIST

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	



A.T.G. Industries Inc.  
731, rue Industrielle Rd.  
PLATING DEPARTMENT  
Rockland, On K4K 1T2  
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

### Pack List

Number: 62728

Date: 08-Nov-13

#### To

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

#### Ship To


DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7  
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity	Description	Rev:	
10 ea	Part: 646.9810  HARD ANODIZE BLACK MIL-A-8625 TYPE III CLASS 2  PRIME MIL-P-23377J TYPE I CLASS N (46.00\$EA) Job: 20130694	PO: 21743 Line:	
<p align="center">Certificate of Conformance</p> <p>A.T.G. Industries certifies that all items in this shipment are in conformance with all requirements, specifications and drawings referenced in the purchase order.</p> <p align="center">ISO 9001 : 2008 REGISTERED ATG SALES-2010 TERMS APPLY</p> <p>DATE : <u>8/11/13</u></p> <p>CERTIFIED SIGNATURE : <u></u></p> <p>RECEIVER SIGNATURE : _____</p>			

